

identifying *L. melanostoma* from the Red Sea and Thiele used it so in his Handbuch.

Rang did not specify a type for his genus *Litiopa*. The first direct designation of type is apparently that of Nevill, 1884,¹¹ *L. melanostoma* Rang. Gray,¹² in 1847, designated *L. bombix* Kiener. Such a designation will be the first made indirectly, if *L. bombix* is synonymous with *L. melanostoma* Rang only, *i.e.*, by the original illustrations of *bombix* or if *L. melanostoma* and *L. maculata* are regarded as the same species.

A fact in the distribution of *L. melanostoma* Rang seems to have been overlooked. The original form, including a large number of individuals, was first found on *Sargassum natans* (L.) off Newfoundland by the Captain of the frigate Bellanger, who conveyed preserved creatures to Rang. Authors follow Verrill (1882) and Dall (1889) and limit the northern range to Martha's Vineyard. According to Winge¹³ the northwestern boundary of the Sargasso Sea or the distribution of *Sargassum* occurs north of 40° N. Lat. only during the summer and autumn. During those periods, the northwestern distribution of the Sargasso Sea extends off Newfoundland. Therefore, probably the original specimens were collected during the summer or fall. Since the living animals were taken off Newfoundland, the extension to Newfoundland should be included in the range of the species.

A NEW GYRAULUS FROM THE PLEISTOCENE OF CALIFORNIA AND A NEW PARAPHOLYX FROM A SUPPOSED PLIOCENE DEPOSIT IN OREGON

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GYRAULUS CRESSMANI new species. Pl. 8, figs. 17, 18.

Shell of about the size of *Gyraulus vermicularis* (Gould), of 3½–4 rounded whorls rapidly increasing in diameter, the sutures deeply impressed, the inner whorls of the right side below the level of the body whorl; left side with rounded whorls and deep

¹¹ Nevill, G., Handlist Moll. Indian Mus., Pt. II, 1884, p. 177.

¹² Gray, J. E., Proc. Zool. Soc. London, 1847, p. 155.

¹³ Winge, O., Rept. Danish Ocean. Exped., 1908–1910, No. 7, vol. III, Misc. Pap. 2, 1923, pp. 15, 16, Fig. 2.

sutures; periphery rounded; aperture rounded and obliquely deflected; sculpture of coarse growth lines, sometimes slightly costate, with more or less deeply incised spiral lines.

H. 1.5; Gr.D. 4.0; L.D. 3.3; Aperture H. 1.0; D. 1.5 mm. Holotype. No. 3982.

H. 1.5; Gr.D. 3.8; L.D. 3.0; Aperture H. 1.3; D. 1.1 mm. Paratype. No. 3983.

H. 1.5; Gr.D. 3.8; L.D. 3.0; Aperture H. 1.3; D. 1.1 mm. Paratype. 3983.

Locality and horizon: South end Lower Klamath Lake, sections 25 and 26, T. 47 N., R. 2 E., Mt. Diablo Merid., Siskiyou Co., California, about 8 miles south of the Oregon state line. The shells occurred in a test pit (no. 1) sunk for archaeological investigation and were found at depths of from three to ten feet. The deposit is late Pleistocene according to Dr. Antevs.

This *Gyraulus* differs from the common *Gyraulus vermicularis* in having the whorls of the left side rounded, not flattened, and there is a total absence of the "reamed out" appearance of *vermicularis*. The sculpture, also, is much coarser, especially by the presence of spiral lines, which are absent or only faintly developed in *vermicularis*.

Most of the specimens are white and bleached, but some material from a deposit 14 inches below the type layer had the epidermis well preserved. A large, fully adult shell of four whorls, 4.8 mm. in diameter, (pl. 8, fig. 17, No. 3984) had a grayish-horn epidermis and the growth and spiral sculpture were well marked. All specimens from this layer (layer 6, impure peat 75%) were well preserved with ashy-horn color.

Gyraulus cressmani was found abundantly in all layers containing mollusks and was associated with abundant material of *Valvata virens platyceps* Pilsbry, *Valvata humeralis densestriata* Pilsbry (some specimens varying toward *V. h. californica* Pilsbry), described from the oil-bearing strata of the Kettleman Hills region, Kings Co., Cal. A few specimens of *Armiger imbricatus* (Müller) occurred with the *Gyraulus*, the first record of the occurrence of this genus in the west.

The species is named for Dr. L. S. Cressman of the University of Oregon, who collected the material.

PARAPHOLYX PACKARDI CORRUGATA, new var. Pl. 8, fig. 19.

Shell of 3-3½ whorls, the spire flattened or slightly elevated, the body whorl very large; sutures not well impressed; aperture about as wide as high, rounded above, slightly angulated below; columella thickened by a heavy plait parallel with the axis; umbilicus closed or with a slight vertical chink; there is no evidence of a tooth on the columella as described for *packardi*; sculpture of coarse growth lines or of distinct, regular ribs evenly spaced; spiral lines showing faintly in some specimens.

H. 8.5; M.D. 10.5; L.D. 7.9; Aperture H. 7.0; D. 6.9 mm. Holotype. No. 3985.

H. 7.0; M.D. 9.0; L.D. 6.5; Aperture H. 5.0; D. 5.0 mm. Paratype. No. 3986.

H. 7.0; M.D. 9.0; L.D. 6.0; Aperture H. 5.2; D. 5.0 mm. Paratype. No. 3986.

Locality and horizon: North end Summer Lake, Lake Co., Oregon, from drilled well at depth of 1080 feet. Thought to be of Pliocene age. The locality is in a valley fill, and the exact horizon is difficult to determine accurately.

This form of Parapholyx appears to be related to *P. packardi* Hanna, described from Warner Lake beds in eastern Oregon.¹ It differs from this species in being smaller (*packardi* has a diameter of 13 to 19 mm.), the spire is more depressed and the costae are more constantly present than in *packardi*. *Corrugata* resembles some depressed forms of *packardi*, especially fig. 5, plate 2 of Hanna's paper. The umbilicus varies from nearly closed to widely open, as described for *packardi*. The costae of the new variety are visible on all specimens examined (about a dozen) and are conspicuous in young and immature shells.

The specimens were submitted for examination by Dr. Carl L. Huffaker, of the University of Oregon. The types of the *Gyraulus* and the *Parapholyx* are in the collection of F. C. Baker. Paratypes are in the Acad. Nat. Sci. Phila.

¹ Hanna, G. D., Fossil fresh water mollusks from Oregon contained in the Condon Museum of the University of Oregon, Oregon Univ. Pub., I, no. 12, pp. 22, 1922.